Alfa Laval SaniJet 20 UltraPure

Rotary jet heads

Introduction

The Alfa Laval SaniJet 20 UltraPure is a rotary jet head tank cleaning machine for hygienic environments. Built to clean tanks with capacities from 5-30 m^3 it combines pressure and flow to create high-impact cleaning jets that rotate in a repeatable and reliable 360-degree cleaning pattern.

The SaniJet 20 UltraPure minimizes the consumption of water and cleaning media. Easy to customize to meet customer requirements, it allows companies to spend less time cleaning and more time producing.

Alfa Laval UltraPure equipment is designed and configured to meet the high demands of the biotech and pharmaceutical industry. Special attention is given to documentation, material and surface finish, in compliance with current Good Manufacturing Practices (cGMP) and other guidance for this industry.

Applications

The Alfa Laval SaniJet 20 UltraPure is designed for the removal of the toughest residues from hygienic tanks across a broad range of industries, such as the pharmaceutical and personal care industries.

Benefits

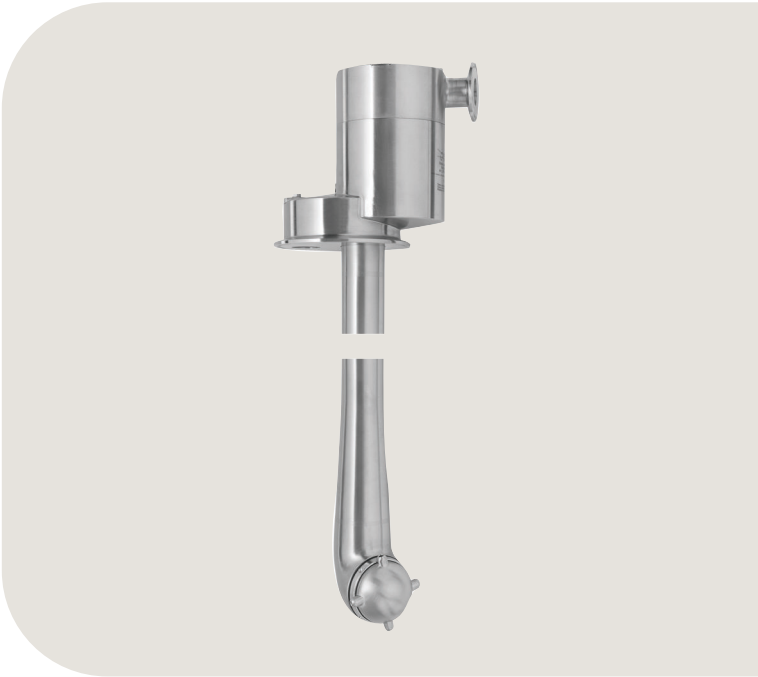
- 60% faster cleaning = more time for production
- Saves up to 70% of your cleaning cost
- High-impact cleaning in a 360° repeatable cleaning pattern
- Cleaning process can be validated using Alfa Laval Rotacheck
- Alfa Laval Q-doc documentation package for full traceability of product-contacted parts and smooth qualification and validation processes

Standard design

The choice of nozzle diameters can optimize jet impact length and flow rate at the desired pressure.

Working principle

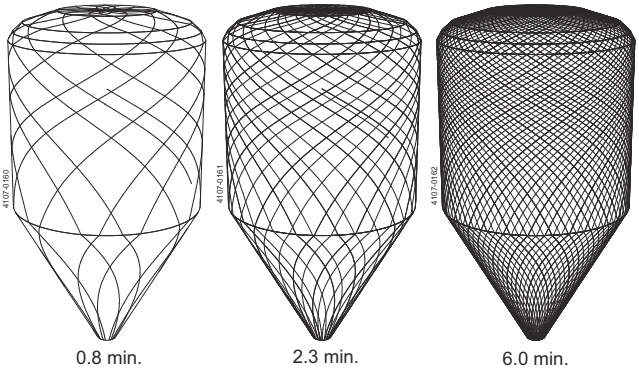
The high-impact jet stream from the Alfa Laval SaniJet 20 UltraPure rotary jet head covers the entire surface of the tank interior in a successively denser pattern. This achieves a powerful mechanical impact with a low volume of water and cleaning media.



The flow of the cleaning fluid makes the nozzles perform a geared rotation around the vertical and horizontal axes. In the first cycle, the nozzles lay out a course pattern on the tank surface. The subsequent cycles gradually make the pattern denser until at full cleaning pattern is reached. Once the full cleaning pattern is reached, the machine will start over again and continue to perform the next full cleaning pattern.

Cleaning Pattern

Example - 2xØ3.8LS



Certificates

Q-doc, Q-doc incl. FAT & SAT and ATEX.


TECHNICAL DATA

Lubricant	
Machine:	Self-lubricating with the cleaning fluid
Air motor:	Can operate non-lubricated
Surface finish	
Product contact parts:	Ra 0.5 µm
Impact throw length	
Impact throw length:	1.5 - 4 m
Tank opening	
Min. tank opening:	4" Clamp w. rotacheck 3" Clamp - rotacheck N/A
Pressure	
CIP media working pressure:	3 - 13 bar
CIP media recommended pressure:	5 - 8 bar
Air driven. Air quality	
Clean, filtered max.:	40 µm
Dry, dew point max.:	5 °C Non-lubricated possible
Air supply pressure:	Max. 7 bar
Free air consumption:	Max. 2 l/sec. (8 m^3/h)
Adjustable speed:	5 - 16 RPM
Cleaning time:	3 - 10 min

Caution
Avoid hydraulic shock, hard and abrasive particles in the cleaning liquid, as this can cause increased wear and/or damage of internal mechanisms. In general, a filter in the supply line is recommended. Do not use for gas evacuation or air dispersion. For steaming we refer to the manual.

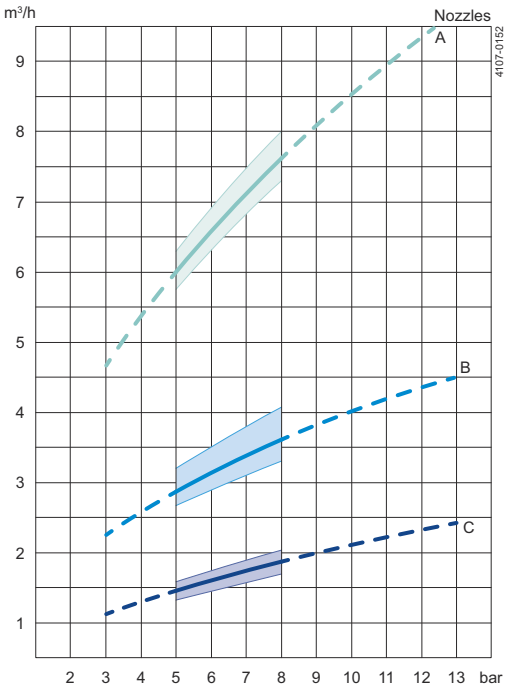
Qualification Documentation

Designed for the BioPharm and Personal Care industry for qualification of hygienic Tank Cleaning Machines. Developed in according to the ISPEV-model and GDP, Good Documentation Practice, and includes: RS (Requirement Specification); DS (Design Specification incl. Traceability Matrix);FAT (Factory Acceptance Test incl. IQ & OQ); 3.1 and USP Class VI Certificates; FDA Declaration of Conformity; TSE Declaration; QC Declaration ofConformity; SAT (Site Acceptance Test Protocol incl. IQ & OQ) for End-User Execution.

Documentation specification

Q-doc	Equipment Documentation includes: • EN 1935/2004 DoC • EN 10204 type 3.1 inspection Certificate and DoC • FDA DoC • GMP EC 2023/2006 DoC • EU 10/2011 DoC • ADI DoC • QC DoC • USP Class VI certificate
Q-doc + FAT-SAT	Qualification Documentation includes: • Q-doc • RS, Requirement Specification • DS, Design Specification incl. Traceability Matrix • FAT, Factory Acceptance Test incl. IQ and OQ • SAT, Site Acceptance Test protocol incl. IQ and OQ for End-User Execution
ATEX	ATEX approved machine for use in explosive atmospheres. Media/Air driven: Catagory 1 for installation in zone 0/20 in accordance with Directive 2014/34/EU • II 1G Ex h IIC 85 °C ...175 °C Ga • II 1D Exh IIIC T85 °C ...T140 °C Da Air motor unit: Catagory 2 for installation in zone 1/21 in accordance with Directive 2014/34/EU • II 2G Ex h IIC T4 Ga • II 1D Ex h IIIC T135 °C Da

Flow Rate

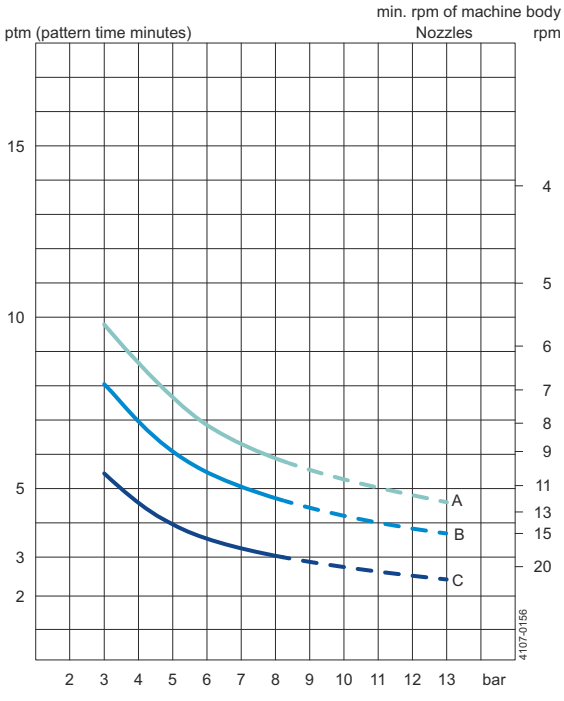


Inlet pressure

Recommended operating pressure 5-8 bar

A = 4 x Ø4.2 mm
B = 2 x Ø3.8 mm LS
C = 2 x Ø2.0 mm

Cleaning Time, Complete Pattern, Media driven



Inlet pressure

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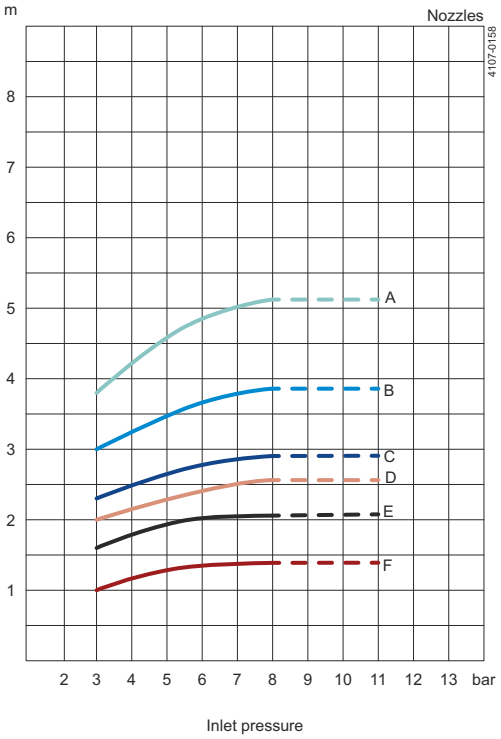
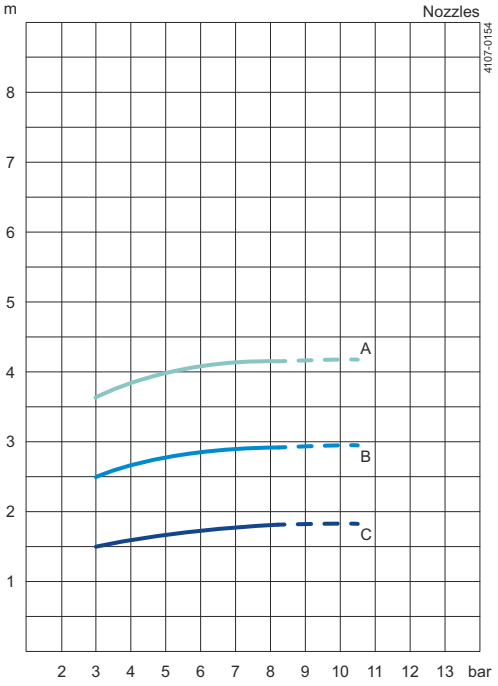
C = 2 x Ø2.0 mm

Impact Throw Length, Air Driven



A = (5 rpm) 4 x Ø4.2 mm
B = (5 rpm) 2 x Ø3.8 mm
C = (16 rpm) 4 x Ø4.2 mm
D = (5 rpm) 2 x Ø2.0 mm
E = (16 rpm) 2 x Ø3.8 mm
F = (16 rpm) 2 x Ø2.0 mm

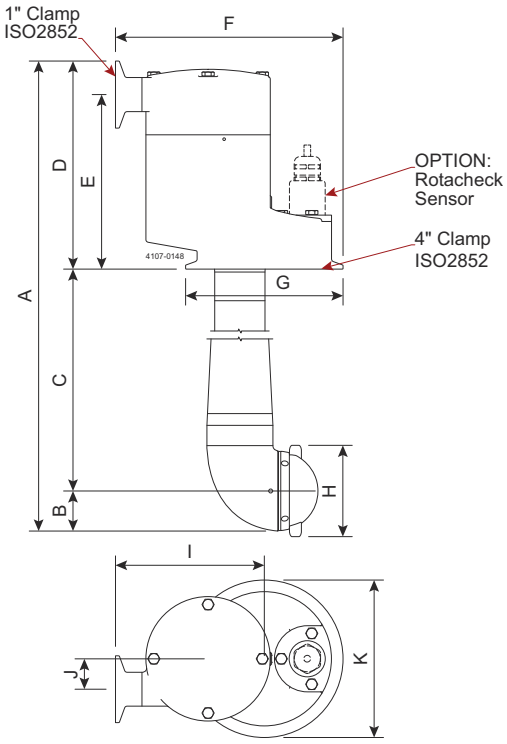
Impact Throw Length, Media Driven



A = 4 x Ø4.2 mm
B = 2 x Ø3.8 mm LS
C = 2 x Ø2.0 mm

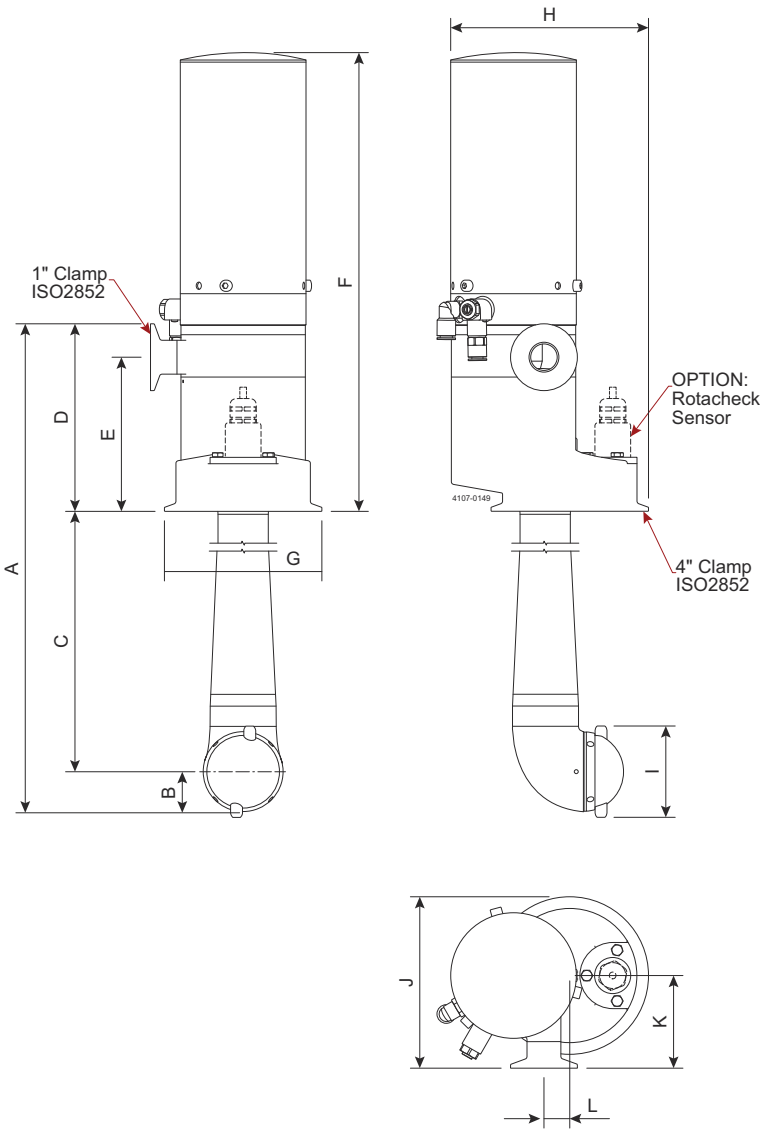
Dimensions (mm)

Media Driven



A	B	C	D	E	F	G	H	I	J	K
537 - 687 - 887 - 1187 - 1387 - 1687	31	350 - 500 - 700 - 1000 - 1200 - 1500	157.25	132	172	Ø119	Ø69	112.5	23	Ø119

Air Driven

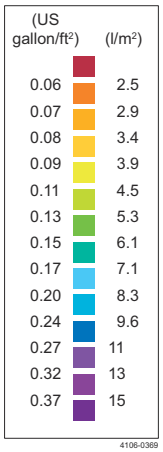


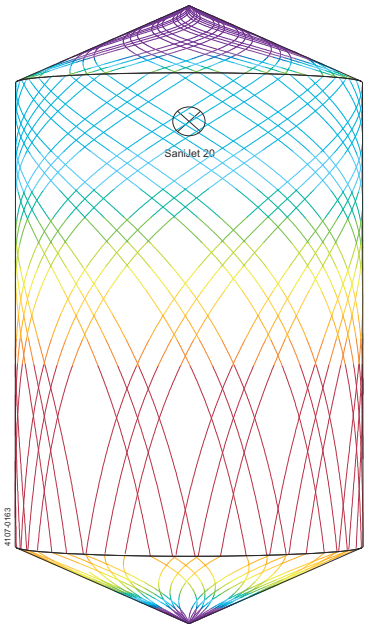
A	B	C	D	E	F	G	H	I	J	K	L
523 - 673 - 873 - 1173 - 1376 - 1673	31	360 - 500 - 700 - 1000 - 1200 - 1500	142	117	340	Ø119	168	Ø69	130	70	19.5

TRAX simulation tool

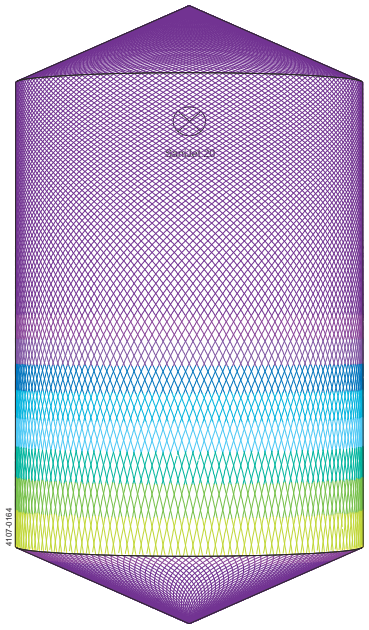
TRAX is a unique software that simulates how the Toftejorg SaniJet 20 performs in a specific tank or vessel. The simulation gives information on wetting intensity, pattern mesh width and cleaning jet velocity. This information is used to determine the best location of the tank cleaning machine and the correct combination of flow, time and pressure to implement. A TRAX demo containing different cleaning simulations covering a variety of applications can be used as reference and documentation for tank cleaning applications. A TRAX simulation is free and available upon request.

Wetting Intensity





D2 m H3 m, Toftejorg SaniJet 20, 4 x Ø4.2 mm,
Time = 1.7 min, Water consumption = 171 l

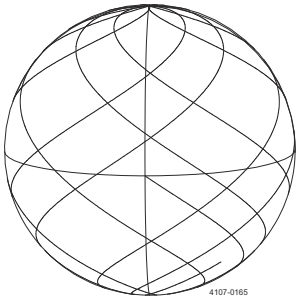


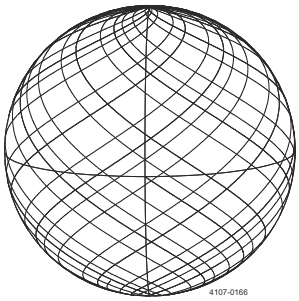
D2m H3m, Toftejorg SaniJet 20, 4 x Ø4.2 mm,
Time = 7.6 min, Water consumption = 763 l

Cleaning Pattern, the Golden Section

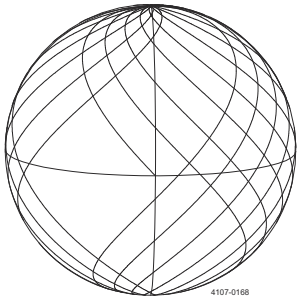
Toftejorg SaniJet 20 operates according to the patented Golden Section cleaning pattern (EP-Patent No.: 0495883, US-Patent No.: 5,279,675), which is unique in building up a uniform pattern. The pattern starts very coarse and refines itself in a step-less way by laying out the tracks approximately in the middle of the two most distant tracks already made. This means that the jets always clean the areas containing the most remaining product, and thereby remove as much deposit as possible in the shortest possible time. In some instances, this method of cleaning can even render a complete cleaning pattern unnecessary. The Golden Section is the most suitable cleaning pattern for an effective pre-rinse.

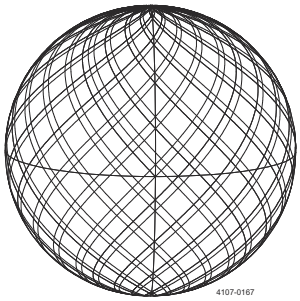
Golden Section Cleaning Pattern





Traditional Cleaning Pattern





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How to contact Alfa Laval

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